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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,706	01/22/2004	Rob van Wouw	16664-US	7679
7590	12/23/2004		EXAMINER	
Stephen D. Dellett Patent Department DEERE & COMPANY One John Deere Place Moline, IL 61265-8098			TORRES, ALICIA M	
			ART UNIT	PAPER NUMBER
			3671	
			DATE MAILED: 12/23/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/763,706	WOUW, ROB VAN <i>[Signature]</i>	
	Examiner	Art Unit	
	Alicia M Torres	3671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/22/04</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-11 and 13-17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Samejima et al., hereafter Samejima, as cited by Applicant.

3. In regards to claims 1-3 and 5-8, Samejima discloses an apparatus comprising:
a gear box (202) having a housing (203) with a bottom, four sides, and an at least partially open top, a cover (unnumbered) over the at least partially open top, an input shaft (202A) inserted through an opening in one of the sides, an output shaft (202B) perpendicular to the input shaft (202A) inserted through an opening in the bottom, a first spiral bevel gear (202a) attached to the input shaft (202A) and a second spiral bevel gear (202b) attached to the output shaft (202B) and being engageable with the first spiral bevel gear (202a), the input shaft (202A) having an axis, the measurement from the axis of the input shaft (202A) to the bottom of the housing (203) being greater than the measurement (see Figure 5) from the axis of the input shaft (202A) to the cover (unnumbered), as per claim 1; and

wherein the input shaft (202A) has a generally horizontal axis and the output shaft (202B) has a generally vertical axis, as per claim 2; and

wherein the cover (unnumbered) has an inner surface with a recess (see Figures 2, 3, 5, 6), the recess providing clearance space for the first spiral bevel gear (202a), as per claim 3; and

further comprising a mower deck (200) and a platform (not shown), the gear box (202) positioned between the mower deck (200) and operator platform, as per claim 5; and

further comprising a rotary cutting blade (4A) mounted to the output shaft (202B), as per claim 6; and

further comprising a pulley (5A) mounted to the output shaft (202B), and a belt (6) wound around the pulley (5A) turning a plurality of rotary cutting blades mounted on vertical shafts (see Figures 1 and 4), as per claim 7; and

wherein the input shaft (202A) is connected to a transmission (not shown), as per claim 8.

4. In regards to claims 9-11 and 13, Samejima discloses an apparatus comprising:

a grass mowing machine having an engine (see column 2, lines 55, 56), a mower deck (200) under which at least one rotary cutting blade (4A) is positioned to rotate, and a platform (not shown) at least partially over the mower deck (200);

an input shaft (202A) having a generally horizontal axis operably connected to the engine, and an output shaft (202B) having a generally vertical shaft connected to the at least one rotary cutting blade (4A); and

a gear box (202) having a housing (203) positioned between the mower deck (200) and the platform, the housing (203) having an internal volume containing a first spiral bevel gear (202a) mounted to the input shaft (202A) and a second spiral bevel gear (202b) mounted to the output shaft (202B) and meshed with the first spiral bevel gear (202a); the internal volume below the generally horizontal axis of the input shaft (202A) being greater than the internal volume above the generally horizontal axis of the input shaft (202A, see Figure 2), as per claim 9; and

further comprising a first opening (unnumbered) in the housing (203) for receiving the input shaft (202A) and a second opening (unnumbered) in the housing (203) for receiving the output shaft (202B), as per claim 10; and

wherein the housing (203) further comprises a removable cover (unnumbered), as per claim 11; and

further comprising an internal recess in the removable cover (see Figures 2, 3, 5, 6), as per claim 13.

5. In regards to claims 14-17 and 20, Samejima discloses an apparatus comprising:
 - an engine (see column 2, lines 55, 56), a transmission (not shown) connected to the engine, and a generally horizontal shaft (202A) extending from the transmission, the generally horizontal shaft (202A) having a first end and a second end;
 - a rotary cutting blade (4A) with a generally vertical shaft (202B) attached thereto, the generally vertical shaft (202B) having a first end and a second end; and
 - a gear box (202) having a top surface and a bottom surface, the gear box (202) enclosing the first end of the generally horizontal shaft (202A) and the first end of the generally vertical shaft (202B), the generally vertical shaft (202B) extending through the bottom surface of the gear box (202), the gear box (202) housing a pair of spiral bevel gears (202a, 202b) to change the transmitting direction from the generally horizontal shaft (202A) to the generally vertical shaft (202B), the measurement from the generally horizontal shaft (202A) to the bottom surface of the gear box (202) being greater than the measurement (see Figures 2 and 4) from the generally horizontal shaft (202A) to the top surface of the gear box (202), as per claim 14;

further comprising a pulley (5A) connected to the generally vertical shaft (202B), and a belt (6) wound around the pulley (5A) to turn a plurality of rotary cutting blades (4A), as per claim 15; and

further comprising a mower deck (200) and an operator platform (not shown) over the mower deck (200), the gear box (202) positioned between the mower deck (200) and operator platform, as per claims 16;

further comprising an operator seat (not shown) mounted on the operator platform, as per claim 17; and

wherein the generally vertical shaft (202B) has a first section with a different diameter than the second section (see Figure 2); as per claim 20.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Samejima in view of van der Lely '359.

The device is disclosed as applied to claim 14 above. However, Samejima fails to disclose wherein the top surface of the gear box comprises a cover attached thereto with threaded fasteners, as per claims 4 and 18; and

wherein the pair of spiral bevel gears have different diameters, as per claim 19.

Van der Lely '359 discloses a similar gear box (28) wherein the top surface (see Figure 4) of the gear box (28) comprises a cover (47) attached thereto with threaded fasteners (48), as per claims 4 and 18; and

wherein the pair of spiral bevel gears (42, 45) have different diameters, as per claim 19.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the different bevel gears of van der Lely '359 on the gear box of Samejima in order to reduce the speed of the shaft.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Samejima in view of van der Lely '658.

Samejima discloses the device as applied to claim 11 above. However, Samejima fails to disclose further comprising an inwardly extending collar in the removable cover, a roller bearing positioned in the collar around the output shaft.

Van der Lely '658 discloses a similar gear box (20) comprising an inwardly extending collar (unnumbered, see Figure 3) in the removable cover (48), a roller bearing (49) positioned in the collar around the output shaft (50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the bearings of van der Lely '658 on the gear box of Samejima in order to support the rotary shaft.

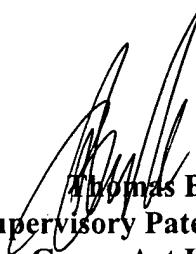
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Umiemoto et al., Hauser, and Irikura et al. especially for the spiral bevel gears, have been cited as of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Torres whose telephone number is 703-305-6953. The examiner can normally be reached Monday through Thursday from 7:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached at 703-308-3870.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-1113. The fax number for this Group is 703-872-9306.



Thomas B. Will
Supervisory Patent Examiner
Group Art Unit 3671

AMT
December 14, 2004